

CLAIMS:

1. A stackable unit for indicating lights comprising:  
a cylindrical case (11) having first and second  
end portions (18, 19);

5 a pair of connection means (20, 21) disposed  
at the first and second end portions (18, 19) of the case  
(11), respectively, and each establishing connection with  
a corresponding end portion (18, 19) of a case (11) of a  
corresponding unit (3a, 3b, 3c, 5, 6, 7) via relative  
10 rotation of the cases; and

an electrical connection member (14, 140, 141,  
142) extended between the first and second end portions  
(18, 19) of the case (11) for establishing electrical  
connection between units (3a, 3b, 3c, 5, 6, 7) corresponding  
15 to each other,

wherein the electrical connection member (14,  
140, 141, 142) at least includes a plate member (15, 150,  
151, 142) as a part thereof,

wherein first and second ends (28, 29) of the  
20 electrical connection member (14, 140, 141, 142) are  
provided with first and second terminal portions (31, 31a;  
32, 32a), respectively, each terminal portion establishing  
connection with a corresponding terminal portion (31, 31a;  
32, 32a) of a corresponding unit (3a, 3b, 3c, 5, 6, 7),

and

wherein at least one of the first and second terminal portions (31, 31a; 32, 32a) is provided with the plate member (15, 150, 151, 142) and includes a contact  
5 portion (42a, 42b) capable of resiliently establishing linear or face-to-face contact with a corresponding terminal portion (31, 31a; 32, 32a) of a corresponding unit (3a, 3b, 3c, 5, 6, 7).

2. The unit for indicating lights according to Claim  
10 1, wherein the electrical connection member (14, 140, 141, 142) includes interconnectable first and second members (15, 150, 151; 16).

3. The unit for indicating lights according to Claim  
15 2, wherein the first member (15, 150, 151) has the first terminal portion (31, 31a) at one end (15e) thereof, and a first internal terminal portion (71) at the other end (15f) thereof, and

wherein the second member (16) has a second internal terminal portion (72) at one end thereof (75) for  
20 connection with the first terminal portion (31, 31a) of the first member (15, 150, 151), and the second terminal portion (32, 32a) at the other end (76) thereof.

4. The unit for indicating lights according to Claim 2, further comprising a circuit board (13) retained by the

case (11),

wherein the first member (15, 150, 151) includes a plate spring member (33, 35, 36) assembled to the circuit board (13), and

5                wherein the second member (16) includes a wire (16) retained by the case (11).

5.     The unit for indicating lights according to any Claim 2, wherein there is provided a sub-assembly (26) including the first member (15, 150, 151) and the circuit board (13).

10    6.     The unit for indicating lights according to Claim 5, wherein the first member (15, 150, 151) includes a retained portion (33) retained by the circuit board (13); a first resilient tongue (35) extended from the retained portion (33) and including the first terminal portion (31, 15 31a); and a second resilient tongue (36) extended from the retained portion (33) and including a first internal terminal portion (71).

7.     The unit for indicating lights according to Claim 6, wherein the retained portion (33) includes a U-shaped plate 20 portion (33) defining an insertion portion (64) capable of receiving an outer edge (63) of the circuit board (13).

8.     The unit for indicating lights according to Claim 6, wherein the first resilient tongue (35) is capable of resiliently biasing the first terminal portion (31, 31a)

substantially along radial directions (R1, R2) of the case (11).

9. The unit for indicating lights according to Claim 6, wherein the second resilient tongue (36) is capable of  
5 resiliently biasing the first internal terminal portion (71) substantially along an axial direction (U) of the case (11).

10. The unit for indicating lights according to any one of Claims 4 to 9, wherein the wire (16) includes a main  
10 body (73) extended along an axial direction (U) of the case (11) and retained by the case (11),

wherein the main body (73) is provided with a bent extension (78) at one end thereof (77), the bent extension (78) provided with the second internal terminal  
15 portion (72), and

wherein the main body (73) is provided with the second terminal portion (32) at the other end (76) thereof.

11. The unit for indicating lights according to Claim 1, wherein an inwardly directed annular flange (90) is provided  
20 at the first end portion (18) of the case (11), and

wherein the electrical connection member (14, 140, 141, 142) includes the electrical connection member (142) comprising the conductive plate member (142).

12. The unit for indicating lights according to Claim 11,

wherein the plate member (142) includes a main body (94) extended along an axial direction (U) of the case (11) and retained by the case (11), and an extension portion (97) substantially orthogonally extended from one end (95) of the main body (94) and aligned with a surface (91) of the annular flange (90), and

wherein the first terminal portion (31a) is provided at the extension portion (97).

13. The unit for indicating lights according to Claim 12, wherein the plate member (142) includes a resilient tongue (98) extended from the other end (96) of the main body (94) in a chevron shape,

wherein the resilient tongue (98) is provided with the second terminal portion (32a), and

15 wherein the resilient tongue (98) is capable of resiliently biasing the second terminal portion (32a) against a corresponding first terminal portion (31a) of a corresponding unit (3a, 3b, 3c, 5, 6, 7) along the axial direction (U) of the case (11).

20 14. Indicating lights comprising a plurality of units (3a, 3b, 3c, 5, 6, 7) according to any one of Claims 1 to 9.

15. The indicating lights according to Claim 14, wherein the plural units (3a, 3b, 3c, 5, 6, 7) includes at least one unit (3a, 3b, 3c) having means (12) for emitting light,

and a base unit (7) having a fixing member (8) for fixing the indicating lights (1).

16. The indicating lights according to Claim 15, wherein the plural units (3a, 3b, 3c, 5, 6, 7) includes a unit (6)  
5 having means for generating sound.

17. The indicating lights according to Claim 15, wherein the plural units (3a, 3b, 3c, 5, 6, 7) includes a unit (7) having an interface (117) for output to external.

18. Indicating lights comprising a plurality of units (3a,  
10 3b, 3c, 5, 6, 7) according to Claim 10.

19. Indicating lights comprising a plurality of units (3a, 3b, 3c, 5, 6, 7) according to any one of Claims 11 to 13.